

Lesson 15: The Coordinate Plane (Distance Formula
and Midpoint Formula)

EQ: How do you find the distance between two points and find the midpoint?

You can use _____ to find the lengths of line segments that are horizontal or vertical. You could also count the length if you have graphed the segments.

Use the _____ for line segments that are not horizontal or vertical.

The **distance formula**: _____ for points

You can find the _____ of horizontal and vertical line segments by counting and dividing.

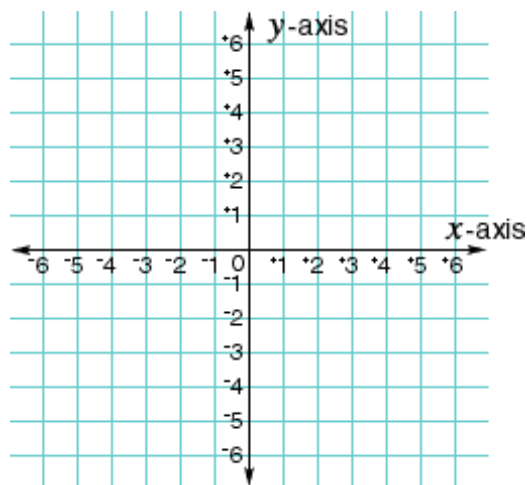
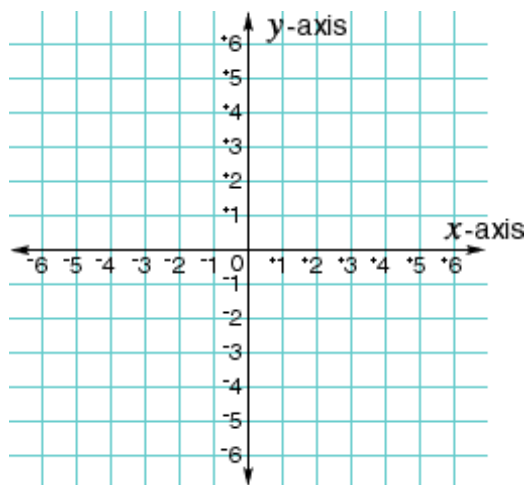
Use the _____ for line segments that are not horizontal or vertical.

The **midpoint formula**: _____ for points

Example 1: Graph the following points. Then find the length and midpoint of the segments the points form.

a. $(2, 3), (2, -5)$

b. $(6, 4), (-4, 4)$



Example 2: Find the lengths and midpoints without graphing.

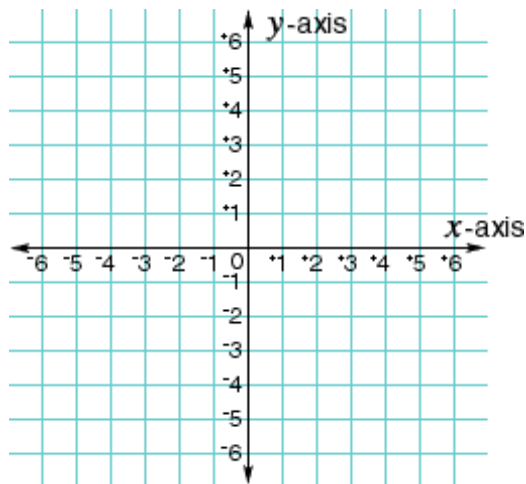
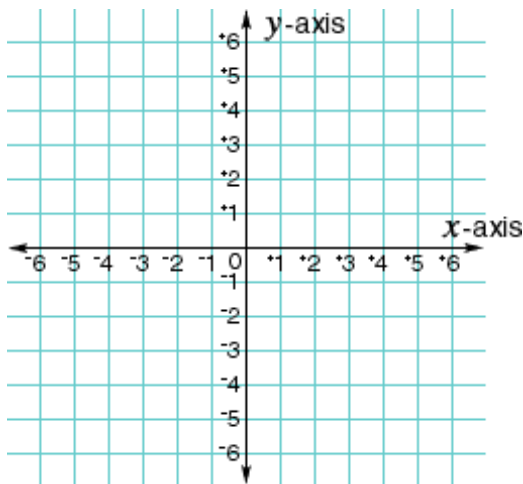
a. $(8, 7), (8, -4)$

b. $(3, 12), (17, 12)$

Example 3: Graph the following points. Then find the length and midpoint of the segments the points form.

a. $(3, 6), (-2, -4)$

b. $(-5, 5), (4, -3)$



Example 4: How can you tell whether a line segment is horizontal or vertical just by looking at the coordinates?

Example 5: From what theorem does the distance formula come? How could you explain this to someone else? Respond to this in your blog by Friday.